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Your Reference: RCA/41417
Application No: GB 9928725.2

14 February 2000

Dear Sirs

Patents Act 1977:

Combined Search and Examination Report under Sections 17 and 18(3)

Latest date for reply: 4 December 2000

I enclose two copies of my search and examination report and three copies of the citation.

By the above date you should either file amendments to meet the objections in the report or make observations on them. If you do not, the application may be refused.

Publication

I estimate that, provided you have met all formal requirements, preparations for publication of your application will be completed soon after **25 April 2000**. You will then receive a letter informing you of completion and telling you the publication number and date of publication.

Amendment/withdrawal

If you wish to file amended claims for inclusion with the published application, or to withdraw the application to prevent publication, you must do so before the preparations for publication are completed. **No reminder will be issued.** If you write to the Office less than 3 weeks before the above completion date, please mark your letter prominently: **"URGENT - PUBLICATION IMMINENT"**.

[†]Use of E-mail: Please note that under patent law e-mail may be used to file correspondence only.



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Yours faithfully

Emma Rendle
Examiner

Important information about combined search and examination

I also ask that you take note of the following points. These might have a bearing on the future stages of your application because the examination report has been sent to you before your application has been published.

- (a) You may file voluntary amendments before making a full response to my examination report. We will publish with your application any new or amended claims you file voluntarily or as a full response, provided that they are received before preparations for publication are completed. It would help us when you file amendments before publication if you could **prominently indicate** in a covering letter whether or not the amendments are intended as a full response to the examination report.
- (b) If you file a full response to the examination report before your application is published I will consider it as soon as possible. However, if this would disrupt the publication of your application, I would have to delay taking any action until the application had been published. This delay could be up to 3 months, depending upon when we receive your response.
- (c) There is another situation when there might be a delay between you filing a full response and the Patent Office responding to it. This would arise if you met all my objections but your application had not or had only recently been published. I could not report the outcome of my re-examination until I was satisfied that the search was complete for documents published before the priority date of your invention and that anybody interested in the application has had three months following publication of the application to make observations on the patentability of your invention.
- (d) Provided that the requirements of the Act have been met, I can send your application to grant as early as three months after publication. Before doing so I will bring the original search up to date and raise with you any further objection that might result from this top-up search. However, there is a possibility that at that time I may not have access to all the patent applications published after the priority date of your invention and of possible relevance to your application. If this is the case I would have to complete the search after grant and if necessary raise any new found novelty objection then.



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Application No: GB 9928725.2
Claims searched: 1-14

Examiner: Emma Rendle
Date of search: 10 February 2000

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.R): H1K (KRD, KRG, KRK); H1R (RAA, RAB)

Int Cl (Ed.7): H01L 23/485, 23/498; H05K 1/02, 1/18, 3/34

Other: EPOQUE: WPI, EPODOC, PAJ

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	US 5 011 066 (MOTOROLA) see whole document, especially column 2 lines 10-17, 29-35 and column 3 lines 17-20.	1-12

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.
& Member of the same patent family

A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.



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Patents Act 1977

Combined Search and Examination Report under Sections 17 & 18(3)

Novelty

1. The invention as defined in claims 1-6, 7 and 8 is not new because it has already been disclosed in the following document:

US 5 011 066 (MOTOROLA) see whole document, especially column 2 lines 10-17 and 29-35 and column 3 lines 17-20.

Claim 1 claims an electronic device which has a group of electrodes provided which are *suitable for* a single solder bump. Most electronic devices provided with a matrix of electronic lands or bond pads would fall within the scope of this claim. The above document is cited because it anticipates claims 7 and 8 additionally.

Inventive step

2. Further, the invention as defined in claims 9, 10, 11 and 12 is obvious in view of what has already been disclosed in the above document. It is known, in many electronic devices, to have electrodes not connected to the circuit within the device and also to have signal, power and ground electrodes. Using the bond strengthening idea disclosed in US 5 011 066 upon these well known electrodes would appear to lack an inventive step.

Clarity and Consistency

3. "Each of groups of said electrodes", in line 7 of claim 1, has no antecedence.

4. "Said corner portions", in line 11 of claim 1, has no antecedence.

5. In line 12 of claim 1 "said group of electrodes" refers to a singular group of electrodes while in line 7 "each of groups of said electrodes" are plural. This inconsistency should be amended and care should be taken to ensure that the dependant claims are also consistent.

6. Claims 4, 5 and 6 appear to be inconsistent with the last three lines of claim 1. Claim 1 requires that the electrodes have substantially the same potential. This would suggest that if one of the group of electrodes was a signal electrode (or a ground electrode or a power supply electrode) then all of the group of electrodes would be. A similar objection occurs against claims 10, 11 and 12 which are dependant upon claim 7 but appear to be inconsistent with claim 7.



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[Examination Report contd.]

7. "Wherein groups of said electrodes....is groups of integrated electrodes", in lines 8-9 of claim 7, is unclear. The clarity of the claim is further reduced by "groups of integrated electrodes" in lines 8-9 of claim 7 being plural while "said group of integrated electrodes", in lines 9-10, is singular.

8. "Said electrodes having a substantially same potential level", in line 10-11 of claim 7, lacks an antecedent.

9. The statements on invention, page 6 lines 1-13 and line 22 of page 6 to line 21 of page 7, should be amended to reflect the amended claims.